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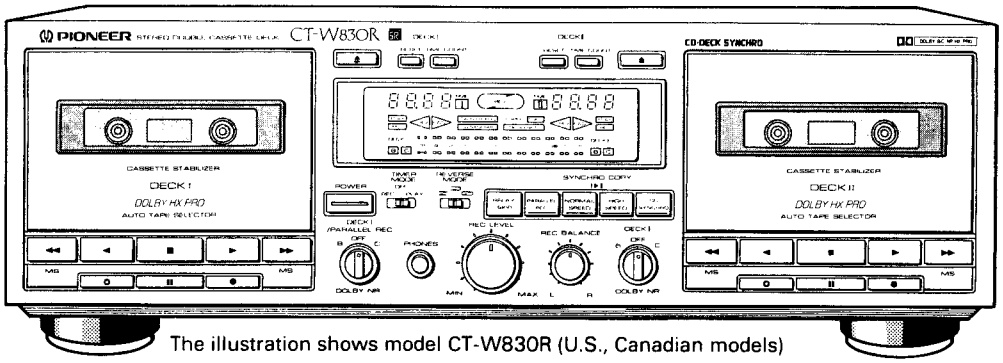
Operating Instructions

STEREO DOUBLE CASSETTE DECK

CT-W830R
CT-W840R



The illustration shows model CT-W830R (U.S., Canadian models)

Thank you for buying this Pioneer product.
Please read through these operating instructions to learn how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE

[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write your serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

[For Canadian model]

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

[Pour le modèle Canadien]

L'interférence, radioélectrique générée par cet appareil numérique de type B ne dépasse pas les limites énoncées dans le Règlement sur les perturbations radioélectriques, section appareil numérique, du Ministère des Communications.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

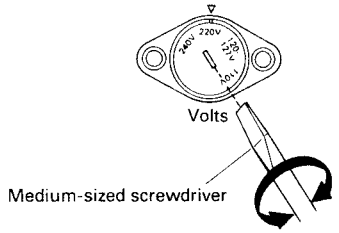
ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

LINE VOLTAGE SELECTOR SWITCH

Only multi-voltage models are provided with this switch.
U.S., Canadian, European, U.K., and Australian models are not provided with this switch.
Mains voltages in Saudi Arabia are 127V and 220V only.
Never use this model with 110V setting in Saudi Arabia.

The line voltage selector switch is on the rear panel. Before shipping your model from the factory, this switch has been set to the power requirements of the destination. Check that it has been properly set before plugging the power cord into the AC outlet. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows.

1. Disconnect the power cord.
2. Insert a medium-sized screwdriver into the groove on the voltage selector.
3. Adjust the voltage selector so that the tip of the arrow points to your required voltage value.



"This product complies with the Radio Interference requirements of the EC (European Community) Directive 87/308/EEC."

PIONEER®
The future of sound and vision.

IMPORTANT 1

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last, make sure that the power switch is off.

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
Equipment sold in the U.K. is not supplied with a power plug.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.
RETAIN INSTRUCTIONS – The operating instrucions should be retained for future reference.
HEED WARNING – All warnings on the appliance and in the operating instructions should be adhered to.
FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.
WATER AND MOISTURE – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
LOCATION – The appliance should be installed in a stable location.
WALL OR CEILING MOUNTING – The appliance should not be mounted to a wall or ceiling.
VENTILATION – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
HEAT – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
POWER SOURCES – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
POWER-CORD PROTECTION – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
POLARIZATION – If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
CLEANING – The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.
POWER LINES – An outdoor antenna should be located away from power lines.
NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
OBJECT AND LIQUID ENTRY – Care should be taken so that objects do not fall and inquids are not spilled into the enclosure through openings.
DAMAGE REQUIRING SERVICE – The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:
- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; on the enclosure damaged.

SERVICING – The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GRAUNDING – If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See fig. A.
CART – An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

NEC – NATIONAL ELECTRIC CODE

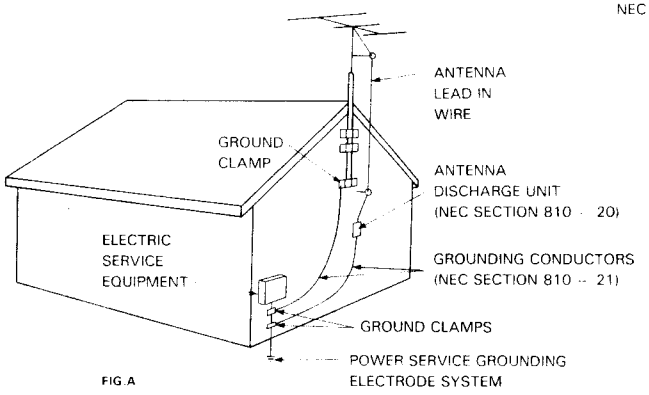


FIG.A

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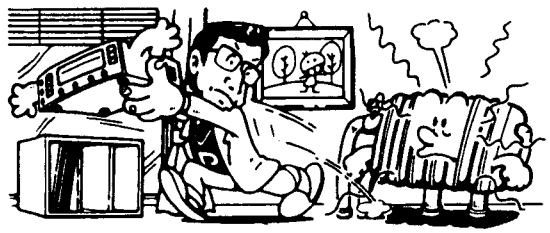
These Operating Instructions have been compiled using the CT-W830R as an example, but their contents apply to the CT-W840R as well.

PRECAUTIONS ON INSTALLATION

HEAT, HUMIDITY, CONTAMINATION

- Do not install the deck in locations subject to direct sunlight, or next to heating device, since the finish or internal parts may be affected adversely.
- Make sure that locations are well ventilated.
- Do not install in humid and dusty locations.
- Avoid installing next to kitchen counters or other places subject to oily smoke.



NOISE INTERFERENCE

- Place this deck away from a speaker system, TV, and color monitor. If the deck is installed near a TV, beeping noise may be recorded on a tape. In this case, turn off the TV.
- Do not place this deck on equipment emitting heat, such as an amplifier. When installing the deck with other audio equipment into a rack, place it on a lower shelf than the one with an amplifier to avoid heat emission.
- Do not place any heavy equipment on this deck.

DEW CONDENSATION

- Do not bring this deck into an warm room while it is quite cold or raise the room temperature quickly, dew may be condensed on the mechanical parts, resulting in a poor performance. Leave the deck for about 1 hour without usage or raise the room temperature gradually.

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

INFORMATION TO USER [FOR U.S. MODEL]

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate this equipment with respect to the receiver
- move this equipment away from the receiver
- plug this equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:
"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

The above instructions apply only to units which will be operated in the United States.

HOW TO HANDLE CASSETTE TAPES

CHECK CASSETTE BEFORE USE

Bear in mind the following points before loading cassette tapes.

Is the tape loose, or is some of the tape outside the cassette?

If some of the tape is projecting outside the cassette shell or if it is loose, if may not enter between the capstan and pinch roller. This will prevent the tape from being supplied or damage the tape itself. In cases like these, insert a pencil into the reel hole and take up the slack (Fig. A).

Some cassette tapes come with a plastic or thick paper stopper which prevents tape slack. Remove this stopper when loading the tape and replace it after using the cassette.

What are the accidental erasure prevention tabs for?

A cassette is provided with these tabs so that important recordings will not be erased accidentally.

When the tab on the cassette shell is broken off with the tip of a screwdriver (Fig. B), it will not be possible to activate the recording function even by pressing the recording (●) button, so valuable recordings will not be erased accidentally.

To re-record over a cassette on which tabs have been broken off, simply stick a piece of doubled adhesive tape over the tab areas, as shown in Fig. C.

In case of metal tape or chrome tape, take sufficient care that the sensor holes (Fig. D, Fig. E) are not blocked.

When this hole is blocked, the automatic tape selector mechanism does not operate correctly.

NOTE:

- *The accidental erasure prevention tabs are located at the top left on both sides A and B (1 and 2), so that material on each side can be prevented from being erased in error.*

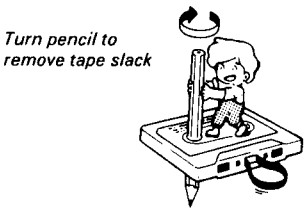


Fig. A

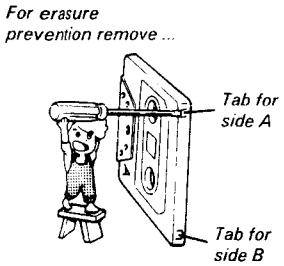


Fig. B

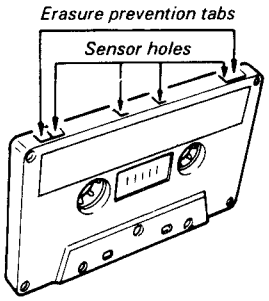
Fig. C

AUTOMATIC TAPE SELECTOR FUNCTION

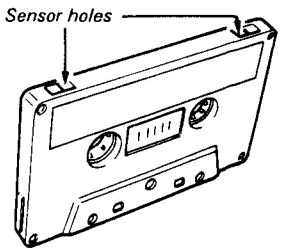
DECK I of this unit is equipped with an automatic tape selector function which utilizes the sensor holes on the tape cassette to determine the type of tape being used, in order to set the deck to match the tape recording bias and equalization.

REGARDING THE TAPE CASSETTE SENSOR HOLES

- Do not use FeCr tapes with this unit.
- When using metal tapes, be sure the tape cassettes have sensor holes.



Metal tape
Fig. D



CrO_2 tape
Fig. E

TIPS ON USING CASSETTE TAPES

- Leader tape (which does not allow sound to be recorded on it) is provided at the beginning of a cassette tape. Start recording after allowing the tape to run for about 5 seconds so that the leader tape clears the recording head.
- Do not leave a cassette tape exposed to the environment. Store the cassette in its case so that dust and dirt do not adhere to the tape after use, and so that the tape is prevented from becoming slack. Choose a location free of magnetism, dust, dirt and oil for storing the tapes.
- Because C-120 tapes are so thin, they easily jam in the pinch roller and capstan, and they are susceptible to other trouble such as irregular winding. Try not to use them with this unit.

CONNECTIONS

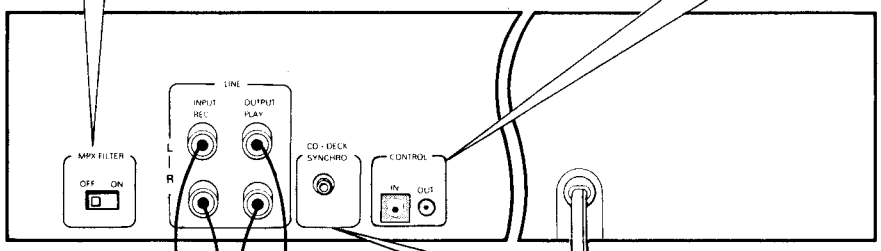
- Make sure to read the instruction manuals of the stereo components to be connected to this deck.
- Do not turn on the stereo component until all connections have been completed.
- Insert plugs firmly. Improper connection may cause noise.

MPX FILTER switch
Set the MPX FILTER switch, located on the rear panel, to ON when recording an FM stereo broadcasting using the Dolby NR system (see page 14). Set it to OFF at other times.
Explanation on the MPX FILTER
The FM stereo signals contain the 19-kHz pilot signal and 38-kHz sub-carrier. Depending on tuners, these may cause a malfunction of the Dolby noise reduction circuit, disabling to reproduce the high-frequency sound. Set this switch to ON to prevent a malfunction.
Set the switch to OFF when the Dolby noise reduction system is not in use or recording non-FM stereo broadcasting. The switch does not effect playback.

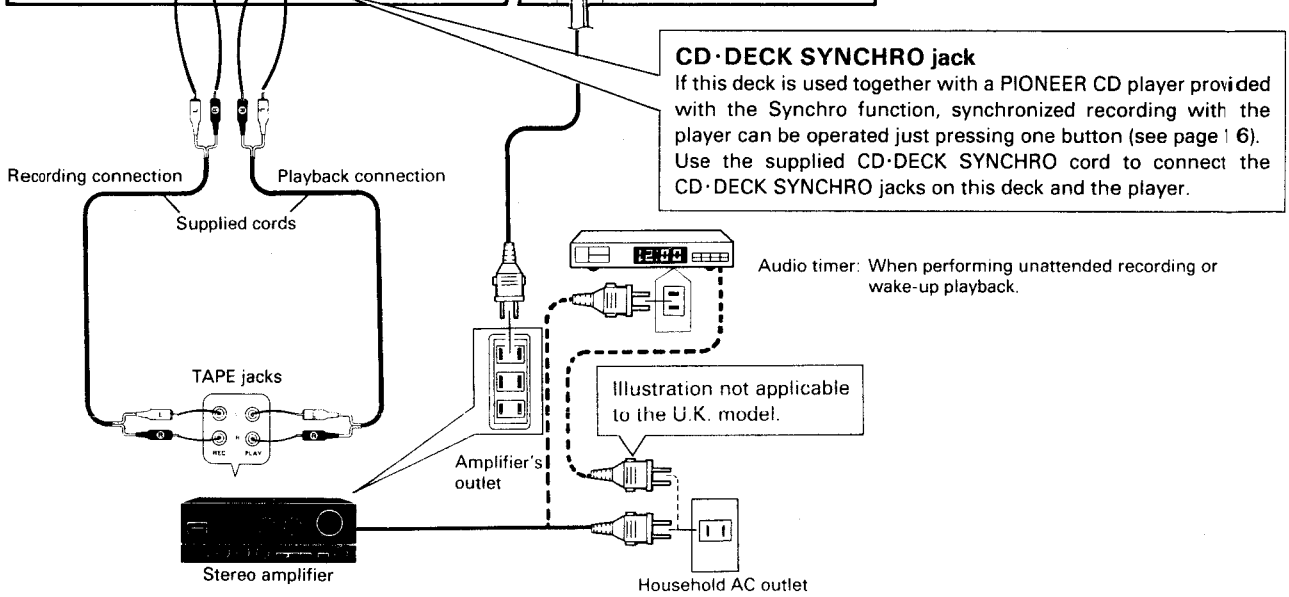
(For U.S. and Canadian models only)

CONTROL IN jack
Connect the jack to the CONTROL OUT jack of a component provided with the PIONEER System Remote Control (bearing the SR mark) with the supplied Remote control cord. Then, you can operate both equipment by using the system remote control.

CONTROL OUT jack
Output intermediary of the remote control signals entered from the above CONTROL IN jack. Connect it to the CONTROL IN jack of another component compatible with the PIONEER System Remote Control.

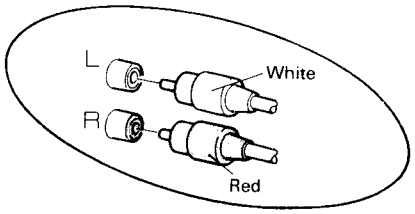


CD·DECK SYNCHRO jack
If this deck is used together with a PIONEER CD player provided with the Synchro function, synchronized recording with the player can be operated just pressing one button (see page 16). Use the supplied CD·DECK SYNCHRO cord to connect the CD·DECK SYNCHRO jacks on this deck and the player.



■ CONNECTING THE INPUT/OUTPUT CORDS

Use a cord with red and white pins. Connect the white pin (L) and red pin (R) to jacks matching the colors. Always insert pins further back. For connection cords, 2 cords for recording and playback are supplied.

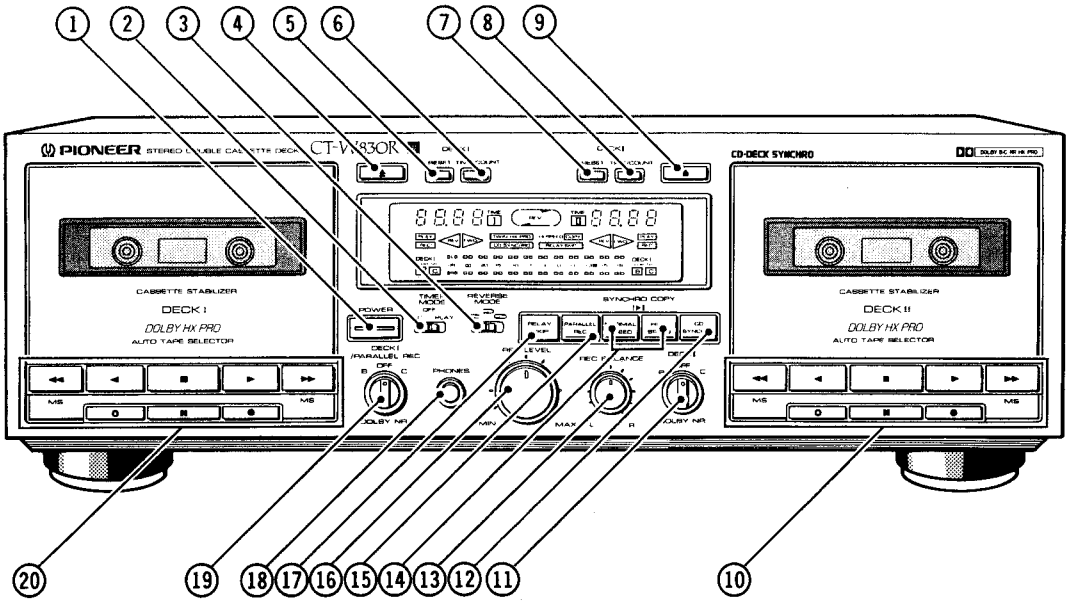


■ CONNECTION TO AN AUDIO TIMER

Refer to the instruction manual of the audio timer when connecting to an audio timer.

FRONT PANEL FACILITIES

■ FRONT PANEL CONTROLS



① POWER switch (POWER)

② TIMER switch (TIMER MODE)

OFF: Set to this position when the timer is not in use.
REC: Set to this position for timer recording (see page 17).
PLAY: Set to this position for timer playback (see page 17).

NOTE:

If you set this switch either to REC or PLAY, the deck will automatically start to record or playback.

③ REVERSE MODE switch (REVERSE MODE)

(see page 11)

④ DECK I EJECT button (▲)

Press to open the cassette door of DECK I. Press the stop button (■) first to stop a tape running before opening the door.

NOTE:

If you turn off the deck while the tape is running, the cassette door may not open. In this case, turn on the deck to open the door.

⑤ DECK I COUNTER RESET button (RESET)

Press to return the counter of DECK I to 0000.

⑥ DECK I COUNTER MODE switch (TIME/COUNT)

This button switches the counter of DECK I between the tape counter and time counter (see page 11).

⑦ DECK II COUNTER RESET button (RESET)

Press to return the counter of DECK II to 0000.

⑧ DECK II COUNTER MODE switch (TIME/COUNT)

Press to switch the counter of DECK II between tape counter and time counter (see page 11).

⑨ DECK II EJECT button (▲)

Press to open the cassette door of DECK II. Press the stop button (■) first to stop a tape running before opening the door.

NOTE:

If you turn off the deck while the tape is running, the cassette door may not open. In this case, turn on the deck to open the door.

⑩ DECK II operation buttons

◀◀ : Press to rewind a tape. If you press during playback, you can operate skip search, in which the number of the skipped tracks corresponds to the number of times you press the button (see page 13).

◀ : Press to play the back side of a cassette tape (opposite to the labeled side), which is called reverse playback.

■ : Press to stop any operation, including simultaneous recording or copying.

▶ : Press to play the front side of a cassette tape (labeled side), which is called forward playback.

▶▶ : Press to fast forward a tape. Press to operate skip search during playback in which the number of the skipped tracks correspond to the number of times you press the button (see page 13).

● : Press to recording standby. Press the Pause (II) or Play (▶, ◀) to resume recording. You cannot record if the erasure prevention tabs are broken.

II : Press to stop a tape temporarily during recording or playback. Press it again to resume the operation (you can also start the operation by pressing ▶ or ◀). You cannot use this button during fast forward or rewinding.

○ : Press during recording, and the recording signals will be erased for about 4 sec. Then, recording standby (see page 14).

⑪ **DECK II DOLBY* NR switch (DOLBY NR)** (see page 14)
This effects DECK II (except simultaneous recording and copying).
NOTE:
Use the same type of position, either B or C of the noise reduction, for playback as the one at recording.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
"DOLBY", the double-D symbol ⧈ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

⑫ **CD SYNCHRO button**
This button automatically operates a CD player while recording a CD (see page 16).

⑬ **RECORDING BALANCE CONTROL (REC BALANCE)**

⑭ **SYNCHRO COPY button (SYNCHRO COPY)**
(see page 17)
- **NORMAL SPEED (normal speed copying)**
  This setting enables you to copy from DECK I to II at normal speed.
- **HIGH SPEED (double speed copying)**
  This setting enables you to copy from DECK I to II at double the normal copying speed.

⑮ **PARALLEL REC button**
Press to record with the DECKs I and II simultaneously (parallel recording see page 15).

⑯ **RECORDING LEVEL CONTROL (REC LEVEL)**
(see page 14)

⑰ **RELAY/SKIP button (RELAY/SKIP)**
Press to light the indicators, and you can operate relay playback or recording (see page 12 or 15). During playback, if a blank section of the tape continues for about 15 sec., blank skip functions to fast-forward the tape to search the next recorded section for playback (see page 12).

⑱ **HEADPHONE jack (PHONES)**

⑲ **DECK I DOLBY* NR switch (DOLBY NR)** (see page 14)
This switch effects DECK I. During parallel recording, the switch effects both DECKs I and II.
NOTE:
Use the same type of position, either B or C of the noise reduction, for playback as the one at recording.

⑳ **DECK I operation buttons**
- ◀◀ : Press to rewind a tape. If you press during playback, you can operate skip search, in which the number of the skipped tracks corresponds to the number of times you press the button (see page 13).
- ◀ : Press to play the back side of a cassette tape (opposite to the labeled side), which is called reverse playback.
- ■ : Press to stop any operation, including simultaneous recording or copying.
- ▶ : Press to play the front side of a cassette tape (labeled side), which is called forward playback.
- ▶▶ : Press to fast forward a tape. Press to operate skip search during playback in which the number of the skipped tracks correspond to the number of times you press the button (see page 13).
- ● : Press to stop recording temporarily. Press the PAUSE (II) or PLAY (▶, ◀) to resume recording. You cannot record if the erasure prevention tabs are broken.
- II : Press to stop a tape temporarily during recording or playback. Press it again to resume the operation (you can also start the operation by pressing ▶ or ◀). You cannot use this button during fast forward or rewinding.
- ○ : Press during recording, and the recording signals will be erased for about 4 sec. Then, recording stops temporarily (see page 14).

■ REMOTE CONTROL OPERATION (For CT-W840R only)

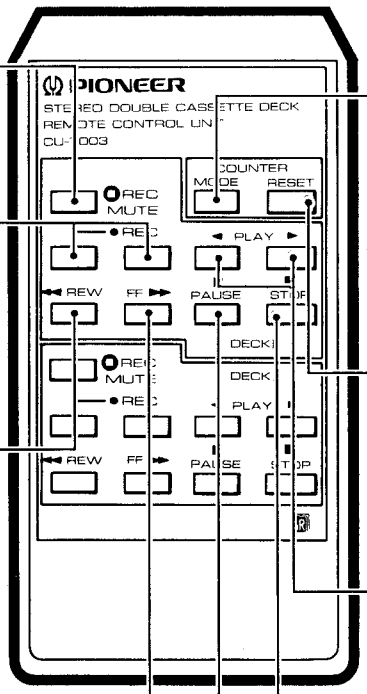
The operation buttons correspond to those on the Deck II (they also correspond to those on the Deck I).

RECORDING MUTE button (O REC MUTE)
Press to create blank sections on the tape during recording.

RECORDING button (● REC)
Press both buttons at the same time to start recording.

REWIND button (◀◀ REW)
Press to rewind a tape. If you press this button during playback, the deck will rewind the tape to the beginning of a track to play it back. The skipped number of tracks corresponds to the number of times you press the button: if you press once, the tape will return to the beginning of the current track; if twice, to the beginning of two tracks behind (music search function).

FAST FORWARD button (FF ▶▶)
Press to fast forward a tape. If you press this button during playback, the deck will fast forward the tape to the beginning of a track to play it back. The skipped number of tracks corresponds to the number of times you press the button: if you press once, the tape will advance to the beginning of the next track; if twice, to the beginning of two tracks ahead (music search function).



COUNTER MODE switch (COUNTER-MODE)
Press to switch 2 modes alternately.
- Tape counter
- Time counter (indicates the elapsed time during playback or recording)

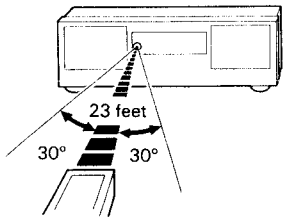
COUNTER RESET button (COUNTER-RESET)
Press to return the counter read to 0000.

PLAY button (◀ ▶ PLAY)
Press to play back a tape.

STOP button (■ STOP)
Press to stop a tape running. All operation will be stopped.

PAUSE button (❚❚ PAUSE)
Press to stop the tape temporarily during recording or playback.
Press this button again to resume the operation. Note that you cannot stop the tape during fast forwarding or rewinding.

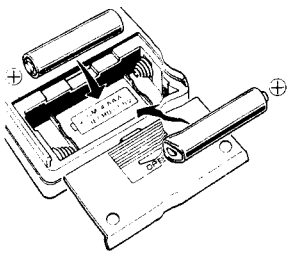
REMOTE CONTROL OPERABLE RANGE



- The remote control can operate within the ranges of approx. 23 feet (7m) in distance from the deck , and 30 degrees to right or left from the the position where the remote control points to the sensor on the deck vertically.
- The remote control may be disabled if any obstacle is placed between the deck and the remote control or if the remote control points to the sensor on the deck improperly.
- The deck may malfunction if it is used near an equipment that generates infrared ray or if another remote control provided for an equipment that generates infrared ray.
- Replace batteries when the operable ranges of the remote control drastically decrease.

REPLACING BATTERIES

Remove the battery compartment cover by sliding it away from the remote control unit. Place 2 dry batteries (AAA) following the polarity indication (+,–) inside the compartment, then return the cover.

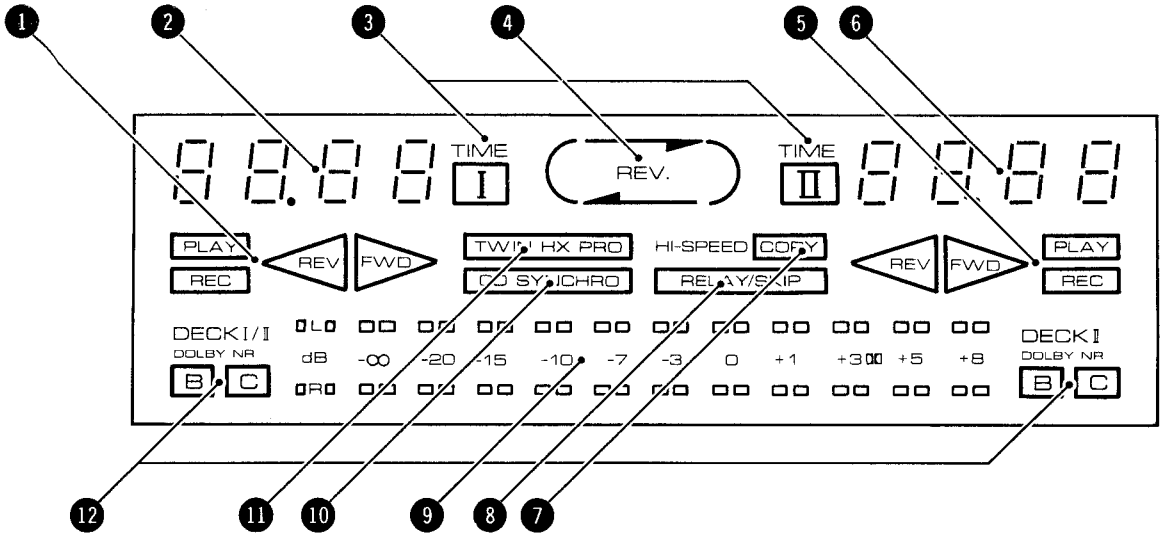


2 dry batteries (AAA dry batteries IEC R03(UM-4))

HANDLING DRY BATTERIES

- Do not use old and new batteries or different type batteries mixed.
- The life span of batteries is approx. 6 months if used normally. Always remove batteries from the remote control when it is not used for a long time, such as more than a month.
- Should any leakage from the batteries occur, remove the leakage by wiping the inside of the compartment sufficiently to place new batteries.

■ INDICATORS



❶ DECK I tape transportation mode indicator
(see page 10)

❷ DECK I counter (see page 11)
This indicates 2 modes of the counter. The number of a track is displayed during MS/SKIP SEARCH.

❸ The indicator lights when the counter is in the time mode.

❹ Reverse mode indicator
One-way mode:
Two-way mode:
Repeat mdoe:

❺ DECK II tape transportation mode indicator (see page 10)

❻ DECK II counter (see page 11)
This indicates 2 modes of the counter. The number of a track is displayed during MS/SKIP search.

❼ Tape COPY indicator
This indicator lights during tape copying.
Copying at the normal speed: COPY
Copying at the double speed: HI-SPEED COPY

❽ RELAY/SKIP indicator
This indicator lights when the RELAY/SKIP button is pressed to enter the relay recording/playback mode.

❾ Level meter
This indicator holds the peak level for about 1.2 sec. +3 dB with the 0 dB mark indicates the standard level of DOLBY NR system.

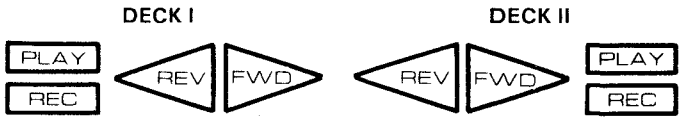
❿ CD SYNCHRO indicator
This indicator lights when the CD SYNCHRO button is pressed and the operation starts.

⓫ TWIN DOLBY HX PRO indicator

⓬ DOLBY NR indicators
Each indicator displays the setting either for DECK I or II.
For OFF:
For B-type ON: B
For C-type ON: C

TAPE TRANSPORTATION MODE INDICATORS

These indicators display the state of how a tape is running. The following lists the relationship between the tape status and indicators on DECK I. For DECK II, the relationship is the same except the PLAY and REC are located on the right of the REV/FWD indicators.



	Forward Playback Mode	Reverse Playback Mode
Stop	FWD	REV
Playback	PLAY FWD	PLAY REV
Recording	REC FWD	REC REV
Fast forward	FWD Flashing quickly	REV Flashing quickly
Rewind	REV FWD Flashing quickly	REV FWD Flashing quickly
Recording pause	REC FWD Flashing slowly	REC REV Flashing slowly
Playback pause	PLAY FWD Flashing slowly	PLAY REV Flashing slowly
Recording mute (recording without any sound)	REC Flashing slowly FWD	REC Flashing slowly REV
Forward Music Search	PLAY Flashing quickly FWD	PLAY Flashing quickly REV
Reverse Music Search	PLAY Flashing quickly REV FWD	PLAY Flashing quickly REV FWD

2 MODES COUNTER

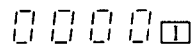
COUNTER MODE switch

Press the switch, and 2 modes change alternately.
Tape counter ↔ Time counter

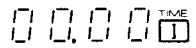
■ **Tape Counter**
Different counters are provided for DECKs I and II. The number of a counter increases/decreases as a tape runs. It is convenient if you take a memo of the recorded content and range of the counter while recording or playing back. You can easily search where you want to listen to or where you lastly recorded to resume recording.

■ **Time Counter**

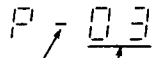
- This indicates the elapsed time for recording or playback. This automatically starts counting when recording or playback starts. During fast-forwarding/rewinding, the counter automatically switches to a tape counter.
- The time counter indicates only time duration of recording or playback. When recording or playback is changed to fast-forwarding, rewinding, or music search, the counter switches from the time counter to tape counter. When the operation returns to recording or playback, the counter switches to the time counter.
- Tape counter indication



- Time counter indication



- MS/SKIP SEARCH indication



Only for reverse search

Skipped tracks number

RESET button

Press this button to return the counter to 0000 when it is used as a tape counter or time counter.

REVERSE MODE SWITCH

This switch effects both DECKs I and II equally.
There are 3 types of reverse modes as follows:
One-way mode: The indicator displays →.
Two-way mode: The indicator displays ⇄.
Repeat mode: The indicator displays ↻.

One-way mode: → position
You can play back or record one side of a cassette tape in this mode. When the tape reaches the end, the deck automatically stops (automatic stop).

Two-way mode: ⇄ position
You can play back or record both sides of a cassette tape. When the tape reaches to the end, it is automatically reversed to start playback or recording for the other side of the tape.
Note that this functions only when you start playing back or recording tape in the forward direction. If the tape is in the reverse direction, the tape automatically stops without being reversed when it reaches to the end.

Repeat mode: ↻ position
You can play back both sides of a tape for 6 times repeatedly (or playing 12 sides of a cassette tape in total) in this mode unless you press the stop button (■). If you stop the tape temporarily during playback, you can resume playback 6 times from where you stopped. This mode operates as the return mode during recording.

AUTOMATIC REVERSE MECHANISM

For both sides of a cassette tape, this deck employs rotary recording and playback heads (using the same head for forwarding and reversing a tape).

RECORDING/PLAYBACK DIRECTION SWITCH

When the deck is turned on, the tape running direction (forward/reverse) is the same as when it was turned off the last time. Be sure to check the tape running direction and remaining tape before usage.
Set the tape transportation direction beforehand for simultaneous recording, relay recording/playback, tape copying, timer recording/playback. To switch the tape transportation mode (forward/reverse), load a cassette tape, press the desired playback button (► or ◄), then the stop button (■) immediately.

PLAYBACK

SINGLE PLAYBACK

- Using Either Deck (DECK I or II)

1. **Insert a recorded cassette tape to either deck.**
2. **Set the type of the DOLBY NR switch ⑲ or ⑪.**
   * You can separately set the type of the DOLBY NR switch for the DECKs I and II.
3. **Set the REVERSE MODE switch ③** (see page 11).
4. **Set a stereo amplifier for tape playback (tape monitor).**
5. **Press the necessary playback button (▶ or ◀) to run the tape in the desired direction.**

■ **Playback Pause**
Press the pause button (❚❚).
Press it again to resume playback.

■ **Playback Completion**
Press the stop button (■).

Different Operations in the reverse mode during single playback

Tape transportation mode of either deck at the start of playback	Reverse mode		
	One-way mode	Two-way mode	Repeat mode
FWD	F	F·R	F·R·F···
REV	R	R	R·F·R···

F: Forward playback (playback of the front side of a cassette tape)
R: Reverse playback (playback of the back side of a cassette tape)
··: Automatic reverse operation

■ **BLANK SKIP**
This function skips unrecorded sections of a tape to play back recorded sections.
Press the RELAY/SKIP button ⑰ to light the indicator to operate the function. When an unrecorded section continues for more than 15 sec., the deck enters the search mode to fast-forward the tape to the next recorded section for playback.

NOTE:
- *You cannot simultaneously play back tapes using both decks.*
- *Always set the same DOLBY NR system on each deck as the one used for recording.*

RELAY PLAYBACK

- Sequential playback using both decks

1. **Insert recorded cassette tapes into both decks.**
2. **Set each type of the DOLBY NR switch on each deck ⑲ or ⑪.**
   * You can separately set the type of the DOLBY NR system for DECKs I and II.
3. **Set the REVERSE MODE switch ③** (see page 11).
4. **Set a stereo amplifier for tape playback (tape monitor).**
5. **Set the tape transportation direction for playback** (see page 11).
   Set the direction separately for the DECKs I and II.
6. **Press the RELAY/SKIP button ⑰.**
   The RELAY/SKIP indicator lights.
7. **Press the playback button (▶ or ◀) on the deck that starts playback first.**
   Relay playback, from the DECKs I to II or vice versa, starts to operate.

■ **Playback Pause**
Press the pause button (❚❚) on the deck that plays back the tape.
Press the button again to resume playback.

■ **Playback Completion**
Press the stop button (■) on the deck that plays back the tape.

■ **Relay Playback Release**
Press the RELAY/SKIP button ⑰ again.
(The RELAY/SKIP indicator turns off.)

- During relay playback, when an unrecorded section continues for more than 15 sec., blank skip automatically functions to skip to the next recorded section for playback.
- You can also operate relay playback from the DECKs II to I.
- Relay playback can be especially useful when combined with repeat mode, which operates smooth background music playback.
  You can listen to different tapes sequentially by replacing the used tape in either deck while relay playback sequentially plays back the tape in the repeat mode in the other deck.
  In this case, relay playback plays back 32 sides of cassette tapes in the DECKs I and II alternately, then stops automatically (if the repeat mode is set when the tape runs in the reverse direction, 31 sides of tapes are to be played back).

Different Operations According to Combinations of Tape Transportation Directions and Reverse Modes

Tape transportation mode at the start of playback		Reverse mode		
DECK I	DECK II	One-way mode	Two-way mode	Repeat mode
FWD	FWD	F → F	FR → FR	FR → FR → FR ···
FWD	REV	F → R	FR → FR	FR → FR → FR ···
REV	FWD	R → F	R → FR	R → FR → FR ···
REV	REV	R → R	R → FR	R → FR → FR ···

During two-way or repeat mode, relay playback first plays back a tape in the forward direction.
F: Forward playback (playback of the front side of a cassette tape)
R: Reverse playback (playback of the back side of a cassette tape)
→: Relay operation

MUSIC SEARCH

MS (MUSIC SEARCH)

- This function plays back the current track again.
- This function also plays back the next track of the current track.

SKIP SEARCH

- This function skips backward or forward from the current track for playback.
- When this function detects an unrecorded section for more than 4 sec. during playback, it automatically fast-forwards or rewinds the tape to search the beginning of a track.
- This function can skip up to 15 tracks forward or backward from the current track.

■ During Forward Playback

- To search a track ahead of the current track, press the fast forward button (▶▶) the same number of times as the number of tracks to be skipped.
- To search a track before the current track, press the reverse button (◀◀) the number of times that is one time more than the number of tracks to be skipped.

■ During Reverse Playback

- To search a track ahead of the current track, press the reverse button (◀◀) the same number of times as the number of tracks to be skipped.
- To search a track before the current tack being played back, press the fast forward button (▶▶) the number of times that is one time more than the number of tracks to be skipped.

NOTES:

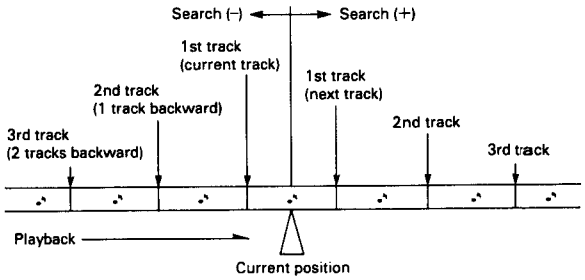
- *The skip search function is effective during playback. When the deck pauses, the function is disabled.*
- *If you press the button the number of times that is more than the number of tracks in a cassette tape, the search function moves on to the other side of the tape during forward search in the repeat mode. However, the function automatically stops the tape when it reaches the end during reverse search in the repeat mode. In the one-way mode, the function does not move on to the other side of the tape. In the two-way mode, if the search starts in the forward direction, it moves to the other side of the tape in the reverse direction. While, the search starts in the reverse direction, it does not move on to the other side of the tape in the forward direction.*
- *Skip search may not detect intervals of a tape correctly when it is in one of the following conditions, resulting in a malfunction. However, this is not a deck failure.*
  1) *The tape has an unrecorded section for less than 4 sec.*
  2) *Sounds of low level of volume, such as classical music, are recorded for some sec. continuously on the tape or unrecorded sections for some sec. are included in a track.*
  3) *The tape includes a conference or conversation where sound is recorded intermittently.*
  4) *Unrecorded sections of a tape contain noise.*

COUNTING TRACKS

- For example, to search the 4th track forward, skip 4 tracks (press the button 4 times) to reach the beginning of the 4th track. To search the 4th track backward, skip 5 tracks including the current track (press the button 5 times) to reach the beginning of the 4th track.
- The playback indicator lights during music search to indicate the function is in progress. During MS/SKIP SEARCH, the skipped track number is displayed on the tape counter indicator, and it decreases as the the function detects the interval section between tracks.

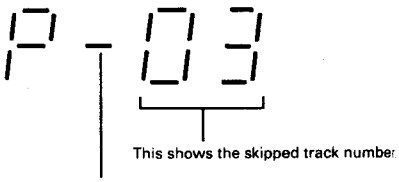
Example of Counting Tracks

- To function skip search from the middle of a track, if "one track backward" is specified, the beginning of the current track being played back will be reached. To skip to a further back track, add one more number to that of the tracks to be skipped.



Display of the skipped tracks number

- During MS/SKIP SEARCH, the skipped track number is displayed on the tape counter, and it decreases as the interval between tracks is detected.



RECORDING

SINGLE RECORDING

- Using Either Deck (DECK I or II)

1. **Insert a tape into either deck for recording.**
2. **Set the type of the DOLBY NR switch ⑲ or ⑪.**
3. **Set the REVERSE MODE switch ③** (see page 11).
4. **Set the recording source on the amplifier.**
5. **Press the recording button (●).**
6. **Adjust the recording level.**
   Adjust the recording level control (REC LEVEL) ⑯ so that the "0 dB" of the level meter lights. "+5 dB" may light temporarily.
7. **Press the necessary playback button (► or ◄) to run the tape in the desired direction.**

■ **Recording Pause**
Press the pause button (❚❚). Press it again to resume recording.
■ **Recording Completion**
Press the stop button (■).

- If the erasure prevention tabs are broken, you cannot record even if you press the recording button (●). Check to see that both tabs of a cassette tape are not broken when recording two ways of the tape.
- Adjust the recording balance control (REC BALANCE) ⑬ for right and left channels. Normally, set it to the center click position.
- The tape transportation mode indicator displays the tape direction for either DECK I or II while recording.

Different Operations Depending on the Combinations of Tape Transportation Directions and Reverse Modes

Tape transportation mode of either DECK I or II at the start of recording	Reverse mode		
	One-way mode	Two-way mode	Repeat mode
FWD	F	F*R	F*R
REV	R	R	R

F: Forward recording (recording the front side of a cassette tape)
R: Reverse recording (recording the back side of a cassette tape)
*: Automatic reverse operation

RECORDING LEVEL ADJUSTMENT

Adjusting the recording level is most important for high quality recording. It is recommended to set the recording level relatively high because of better S/N (ratio of signals and noise levels) and wider dynamic range (range between strength and weakness of sound). If you set the level too high, the sound becomes distorted. On the other hand, if you set the level too low, the tape noise may disturb you. Set it to the maximum level possible, characteristic to the tape, to get the best recording.

RECORDING MUTE (REC MUTE)

Create unrecorded sections on a tape. It is necessary for skip search.

■ **Creating blank sections for 4 sec.**
Press the recording mute button (●) during recording.
* The recording indicator [REC] flashes, the deck enters the muting mode where no sound is recorded for about 4 sec., then it enters the recording pause mode. Press the pause button (❚❚) to resume recording.

■ **Creating blank sections for no more than 4 sec.**
Press the recording mute button (●), then the pause button (❚❚).
■ **Creating blank sections for more than 4 sec.**
Hold down the recording mute button (●).
* The recording indicator [REC] flashes. Release the button, and the deck enters the recording pause mode.

DOLBY NR SYSTEM

- The DOLBY NR system reduces high-frequency tape noise generated during tape playback.
- The DOLBY NR B type reduces noises of high range, and widens the dynamic range.
- Since the DOLBY NR C type applies noise reduction effect to middle range of frequencies as well, it gives better effect to high quality recording.
- When playing back a tape recorded in the DOLBY NR system, set the same DOLBY NR system as recording to get the proper noise reduction effect.

TWIN DOLBY HX PRO

- Each deck is provided with a separate DOLBY HX PRO system.
- The DOLBY HX PRO controls the optimum recording bias depending on the high-frequency condition of music signals. Due to this system, you can record sound such as digital source that includes many energetic high-frequency signals.
- Since the DOLBY HX PRO is usually set to ON, you can record with high quality. The DOLBY HX PRO can be gained irrelevant to the DOLBY NR system. The DOLBY HX PRO is also operable only during recording, therefore, this effect is available even when a radio cassette or car stereo does not have the DOLBY HX PRO.

NOTE:
You cannot reproduce the original sound with fidelity under the following conditions:
If you set the DOLBY NR system to OFF when playing back the tape recorded with the DOLBY NR system;
If you set the DOLBY NR system to ON (B or C) when playing back the tape recorded without the DOLBY NR system.

RELAY RECORDING

- Recording Using Both Decks in Sequence

1. **Insert cassette tapes for recording into both decks.**
2. **Set each type of the DOLBY NR switch on each deck ⑱ or ⑪.**
   * The type of the DOLBY NR system can be set separately for DECKs I and II.
3. **Set the REVERSE MODE switch ③** (see page 11).
4. **Set the recording source on the amplifier.**
5. **Set the tape transportation direction for recording** (see page 10).
   Set the separate direction for DECKs I and II.
6. **Press the recording button (●) on DECK I.**
7. **Adjust the recording level** (see page 14).
8. **Press the RELAY/SKIP button ⑰.**
   The [RELAY/SKIP] indicator lights.
9. **Press the pause button (II) on DECK I.**
   Relay recording starts from DECKs I to II.

■ **Recording Pause**
Press the pause button (II) on the deck in operation.
Press the button again to resume recording.

■ **Recording Completion**
Press the stop button (■) on the deck in operation.

■ **Relay Recording Release**
Press the RELAY/SKIP button ⑰ again.
(The [RELAY/SKIP] indicator turns off.)
Press the button once to release relay recording. To resume relay recording, replace the recorded tape with a new tape, then press the RELAY/SKIP button ⑰ again.
(The [RELAY/SKIP] indicator lights.)

Different Operations Depending on the Combinations of the Tape Transportation Directions and Reverse Modes

Tape transportation mode at the start of recording		Reverse mode	
DECK I	DECK II	One-way mode	Two-way mode or repeat mode
FWD	FWD	F → F	FR → FR
FWD	REV	F → R	FR → R
REV	FWD	R → F	R → FR
REV	REV	R → R	R → R

F: Forward recording (recording the front side of a cassette tape)
R: Reverse recording (recording the back side of a cassette tape)
→: Relay operation

NOTES:
- *When erasure prevention tabs are broken, you cannot record even if you press the recording button (●).*
- *Always set TIMER switch ② to OFF.*
- *You cannot relay-record from DECKs II to I.*
- *When a tape reaches the end, DECK I automatically stops recording, then DECK II starts recording. It automatically stops recording when the tape reaches the end.*

PARALLEL RECORDING

- Recording Using Both Decks Simultaneously

1. **Insert cassette tapes into both decks for recording.**
2. **Set the type of the DOLBY NR switch on DECK I ⑱.**
   * You cannot set different types of the DOLBY NR system for DECKs I and II.
   (The type of the DOLBY NR system for DECK I is applied to DECK II. Therefore, the setting for DECK II is ignored and the indicator for it is the same as the one set for DECK I.)
3. **Set the REVERSE MODE switch ③** (see page 11).
4. **Set the sound source on the amplifier for recording.**
5. **Set the tape transportation direction for recording** (see page 10).
   Set separate directions for DECKs I and II.
6. **Press the recording button (●) on DECK I.**
7. **Adjust the recording level** (see page 14).
8. **Press the stop button (■) on DECK I.**
9. **Press PARALLEL REC button ⑮.**
   Both DECKs I and II start recording the same sound source.

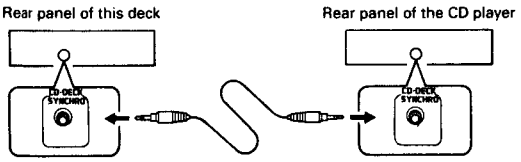
■ **Parallel Recording Pause**
Press the pause button (II) on either deck (both decks pause).

■ **Parallel Recording Completion**
Press the stop button (■) on either deck (both decks pause).

NOTES:
- *When either tape reaches the end, parallel recording completes. Therefore, use the same length tapes for both decks.*
- *If the erasure prevention tabs are broken, you cannot parallel-record even if you press PARALLEL REC button ⑮.*
- *Always start recording from the forward direction (FWD) for repeat recording. Otherwise, the tape automatically stops when it reaches the end in the reverse direction.*
- *Since the recording level adjustment effects both decks equally, it is recommended to use the same type of cassette tapes.*
- *If you press the recording mute button (●), both decks enter the recording mute mode (see page 14).*

CD·DECK SYNCHRO

1. **Connect the CD player with the supplied CD·DECK SYNCHRO cord.**
   (Make sure to connect the CD player and cassette deck, or the CD player, amplifier, and cassette deck using in/out connection cords.)



CD·DECK SYNCHRO cord

Note:
To operate the CD·DECK SYNCHRO function, even when you use an optical fiber cable to connect the CD player and amplifier, connect them (or CD player and deck) with a pin plugs cord. Otherwise, the function is disabled.

2. **Insert the CD into the CD player for recording.**
3. **Set a cassette tape.**
   * Advance the tape to where you want to start recording.
4. **Press the play button (▶) on the CD player.**
5. **Adjust the recording level** (see page 14).
6. **Press the stop button (■) on both the deck and CD player.**
   The CD·DECK SYNCHRO does not function properly unless the CD player and deck are in the stop mode.
7. **Press the CD SYNCHRO button ⑫.**
   * The CD player starts to play, and the deck automatically starts to record.
     (When recording from the beginning of a tape, press the CD SYNCHRO button for about 5 sec. to advance the leader section of the tape.)

■ **Program Recording**
Program the CD player for playing back a CD, and you can record music according to the desired order.

■ **Start timing with the CD player and deck**
Recording starts when the CD SYNCHRO button ⑫ is pressed, while playback does not start until you release the button on the CD player. This different timing is useful to skip the leader of a tape or create an unrecorded section on a tape.

NOTES:
- *The CD·DECK SYNCHRO function can be operated only with the PIONEER's CD player provided with the CD·DECK SYNCHRO function.*
- *Always use the designated cords for connection.*
  The CD player can be either a twin CD or multi CD player.

ABOUT RECORDING

You can use either DECK I or II for synchro recording.
You can also operate relay recording with the CD player.

■ **When playing back the CD completes;**
The CD player stops, and the deck enters the pause mode.
(The deck enters the stop mode in a min.)

■ **When the CD player changes CDs;**
(For both twin and multi CD players)
The deck enters the pause mode, and resumes recording when the next CD starts to play back. The blank section between the tracks is automatically created for about 4 sec.

■ **When the tape reaches the end while the CD is being played back;**
The CD player returns to the beginning of the current track and enters the pause mode. When repeat recording or relay recording is being operated, the CD resumes playback 10 sec. after the reverse/relay operation. In case of changing tapes, set a new tape, then press the CD SYNCHRO button ⑫ to resume recording in less than 1 min. Otherwise, the CD player enters the stop mode.

■ **Relay recording** (Press the RELAY/SKIP button ⑰.)
- After DECK I stops, DECK II starts to record.
- If the CD player stops playback while DECK I is recording, DECK I stops and DECK II starts recording from the beginning of the CD (if the CD player is either a twin or multi CD player, DECK II will record the next CD).

NOTE:
During relay recording, DECK I stops when CDs are changed as well as when the tape in DECK I reaches the end, and DECK II starts recording.

- A twin CD player stands for a twin-tray compact disc player.
- A multi CD player stands for a magazine compact disc player (sequential playback of 6 compact-disc player).

TAPE COPYING

- Copying the recorded tape from DECKs I to II

1. **Insert a recorded cassette tape into DECK I for playback.**
2. **Insert a blank cassette tape into DECK II for recording.**
3. **Set the REVERSE MODE switch** ③ (see page 11).
4. **Set the tape transportation direction** (see page 11).
   * For repeat copying, always set the direction to forward (FWD). If set to reverse (REV), the tape automatically stops when it reaches the end.
5. **Press the SYNCHRO COPY button** ⑭.
   - Using the NORMAL SPEED button (normal speed copying) Copying while listening to music
   - Using the HIGH SPEED button (double speed copying) Copying the whole tape quickly

NOTE:
The tape in DECK II will be copied in the same type of the DOLBY NR switch ⑪ as DECK I's tape, irrelevant to its own setting. When listening to the copied tape, set the type of the DOLBY NR switch ⑲ on DECK I.

■ **Releasing Copying**
Press the stop button (■) on either deck (both decks enter the stop mode).

NOTES:
- *There are 2 kinds of tape copying: one is normal speed copying while listening to recording music; the other is double speed copying that takes only half the normal speed copying.*
- *The recording level adjustment is not necessary during tape copying.*
- *No other button except the stop button (■) is disabled during double speed copying.*
- *The recording mute button (●) and pause button (❚❚) on DECK II are operable during normal speed copying.*
- *When either tape reaches the end, the tape copying mode is released. Therefore, use the same length tapes for both decks.*
- *When copying the same recorded tape multiple times, always use the original tape as a recording source. Copying a copied tape deteriorates the sound quality.*
- *During double speed copying, noise (beep sound) may be recorded if a TV is placed nearby. In this case, either switch the double speed copying to normal speed copying or turn off the TV.*

TIMER PLAYBACK/RECORDING

TIMER PLAYBACK (wake-up playback)

1. **Insert a recorded cassette tape for playback.**
   Playback is operated on the deck where the tape is loaded. If both decks are loaded with cassette tapes, relay playback is operated.
2. **Set the type of the DOLBY NR switch ⑲ and/or ⑪.**
3. **Set the REVERSE MODE switch** ③ (see page 11).
4. **Set the stereo amplifier to tape playback (tape monitor).**
   Set the sound volume for the timer for playback (listen to the sound once to check the volume).
5. **Set the tape transportation direction** (see page 11).
6. **Set the audio equipment timer.**
   After setting, all equipment are turned to off.
7. **Set TIMER switch** ② **to PLAY.**
   When the specified time on the audio timer comes, all equipment are turned on to automatically start playback.

NOTES:
- *During timer playback, blank skip functions to fast-forward the tape to the next track for playback when an unrecorded section continues for about 15 sec.*
- *Always set the same type of the DOLBY NR system as recording.*
- *Refer to the timer instruction manual for details, since every audio timer requires a different procedure.*
- *Always set the timer switch to off when the timer is not used. If set to play, playback automatically starts when the deck is turned on.*

TIMER RECORDING (unattended recording)

1. **Insert a cassette tape for recording.**
   The deck where the tape is loaded records. When both decks are loaded with tapes, relay recording starts.
2. **Set the type of the DOLBY NR switch ⑲ and/or ⑪.**
   You can separately set the type of the DOLBY NR system for DECKs I and II.
3. **Set the REVERSE MODE switch** ③ (see page 11).
4. **Set the tape transportation direction** (see page 11).
5. **Set the recording source on the amplifier.**
   Set the input switch to tuner on the amplifier, then select the desired broadcast.
6. **Press the recording button (●).**
   The deck enters the recording pause mode.
7. **Adjust the recording level** (see page 14).
8. **Set the audio equipment timer.**
   After setting, all equipment are turned off.
9. **Set TIMER switch** ② **to REC.**
   When the specified time on the audio timer comes, all equipment are turned on to start recording.

NOTES:
- *Note than even if you leave a cassette tape in DECK II unintentionally, relay recording automatically starts from DECK I, then moves on to DECK II.*
- *Set the tape transportation directions for both decks to operate relay recording.*
- *If the erasure prevention tabs are broken, timer recording is disabled.*
- *Refer to the timer instruction manual for details, since each audio timer requires a different procedure.*
- *Always set the timer switch to off. If set to rec, recording automatically starts when the deck is turned on.*

MAINTENANCE

ARE THE HEADS CLEAN ?

Always keep the heads clean. Otherwise, dirty heads may cause reproduced sound to be unclear and distorted as well as recording or playback to be disabled.

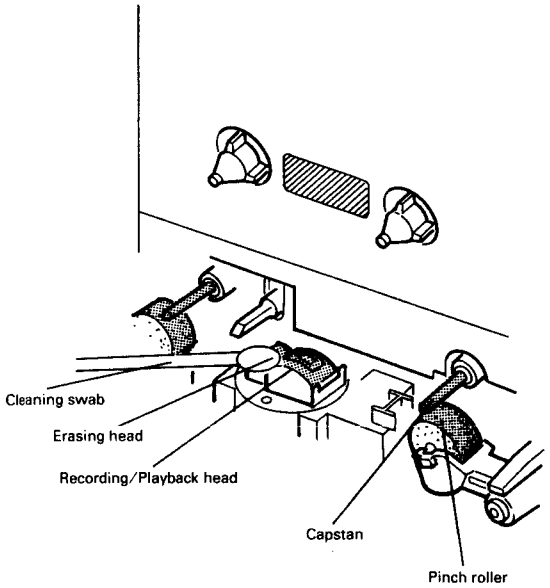
CLEANING THE HEADS

The heads, capstans, and pinch rollers are liable to get stuck with dirt, dust, and oil while a tape is running.
Stained heads may result in unclearness or distortion of reproduced sound, or disability of recording or playback. Clean the heads, pinch rollers, and capstans regularly about every 10-hour usage with a commercial head cleaning swab.

■ **Procedure**

1. Press the eject button (▲) to open the cassette door.
2. Moisten the cleaning swab with a small amount of cleaning fluid to clean the heads, capstans, and pinch rollers.

NOTE:
Do not use the deck for 2 to 3 min. until the cleaning fluid dries.



DEMAGNETIZING THE HEADS

When the deck is used for a long time, the head section may be magnetized. The same effect may occur when it is accessed with iron such as the tip of a screw driver or a magnet. In this case, the high-frequency signals may be depressed or noise may be generated. Therefore, demagnetize the heads regularly with a commercial head eraser. Make sure to turn off the power. Refer to the instruction manual of the head eraser for further information.

CLEANING THE FRONT PANEL AND CASSETTE DOOR

Wipe the front panel and cassette door with a soft cloth when they are dusty or greasy. If they are severely stained, remove stains with a soft cloth moistened with a small amount of detergent.
Then wipe them with a dry cloth. Do not use thinner, benzine or alcohol since the panel finish may be damaged. Read closely the supplied notes when you use a chemical duster.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, as your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
No power.	The power plug may be loosely inserted or removed.	Secure the power plug.
No tape transportation.	The tape reaches the end.	Rewind the tape.
	The deck enters the pause mode.	Press the pause button again.
	The cassette tape is not placed properly.	Replace the cassette tape properly.
No sound.	Connection failure.	Secure connections by inserting connection cords firmly or putting back the removed cords.
	Controls on the amplifier are not set properly.	Set the controls properly for the deck playing back.
No recording.	The erasure prevention tabs are broken.	Change cassette tapes or seal the broken tabs with adhesive tape (see page 4).
	Heads are dirty.	Clean heads (see page 18).
	The recording level control is set to "MIN".	Turn the control from MIN to the right position.
	Connection failure.	Secure connections by inserting cords firmly or replacing the removed cords.
		Secure the input/output connections by inserting cords properly.
High frequency is not produced properly.	Heads are dirty.	Clean heads (see page 18).
	You play back the tape by setting the DOLBY NR switch either B or C that was not recorded with the DOLBY NR system.	Set the DOLBY NR switch to off.
Distorted sound.	Heads are dirty.	Clean heads (see page 18).
	The tape recorded the distorted sound.	Change the cassette tape with a new one.
	The recording level is set too high.	Lower the recording level for recording.
Sound with vibration or reproduced intermittently.	Heads are dirty.	Clean heads (see page 18).
	The tape is not wound evenly.	Rewind the tape by fast forwarding or rewinding.
Too much noise.	Heads are magnetized.	Demagnetize with a head erasure (see page 18).
	The tape includes a lot of noise.	Change the tape with a new one.
	Connection cords are not inserted firmly.	Secure the input/output connections by inserting cords properly.
	The recording level is too low.	Raise the recording level.
High frequencies are emphasized.	The tape recorded with the DOLBY NR system is played back with the DOLBY NR switch off.	Set the DOLBY NR switch to B or C.
No erasure of recorded tape.	The recording level control is not set to the minimum.	Turn the control to the left end.
	Heads are dirty.	Clean heads (see page 18).
Music search is disabled.	The blank section between tracks is less than 4 sec.	Change the tape with the one having blank sections of 4 sec. or more.
Playback or recording starts when the deck is turned on.	The timer switch is set to play or rec position.	Set the timer switch to off.
CD·DECK SYNCHRO is disabled.	The equipments are not connected properly.	Connect them properly (see page 16).

SPECIFICATIONS

System ..... 4-track, 2-channel stereo
Heads ..... "Hard Permalloy" recording/playback head x 2
"Ferrite" Erasing head x 2
Motor ..... DC servo capstan motor x 2
Wow and Flutter ..... No more than 0.055% WRMS (JIS)
No more than ±0.16% (DIN)
Fast Winding Time ..... Approx. 100 sec. (C-60 tape)
Frequency Response (–20 dB recording)
Metal tape ..... 18 Hz ~ 18,500 Hz
Chrome tape ..... 18 Hz ~ 18,000 Hz
Normal tape ..... 18 Hz ~ 17,000 Hz
S/N
Dolby NR OFF ..... 57 dB or more
Dolby B-type NR ON ..... 10 dB improved at 5 kHz
Dolby C-type NR ON ..... 19 dB improved at 5 kHz
(third high frequency distortion 3%, acoustic equalizing)
Harmonic Distortion 0.7%
(third frequency distortion at 1 kHz, metal tape)

Subfunctions

- I/II automatic reverse
- Double recording/playback reverse
- DOLBY HX PRO headroom extension
- Deck I/II independent DOLBY NR switch
- Relay playback
- Relay recording
- Simultaneous recording (parallel recording)
- Normal speed/Double speed synchro copying (Deck I → II)
- MS ±15 Skip search
- Blank skip (during relay playback)
- CD·DECK SYNCHRO function
- Automatic tape selector
- Timer recording/playback start (automatically moves on to relay operation)
- Automatic recording mute
- Headphone jack
- FL peak level meter
- 2-mode electronic 4-digit tape counter (Deck I/II independent)

Input Terminals

LINE INPUT ..... RCA pin jack x 2
input sensitivity 63 mV
input impedance 50 kΩ
LINE OUTPUT ..... RCA pin jack x 2
standard output level 316 mV
output impedance 3 kΩ
HEADPHONE OUTPUT ..... stereo standard jack 0.25 mW
load impedance 8Ω

Power Supplies

Power Requirements
U.S., Canadian models ..... AC 120 Volts, 60 Hz
European model ..... a.c. 220 Volts ~, 50/60 Hz
U.K. model ..... a.c. 240 Volts ~, 50/60 Hz
Multi voltage model/U.S.military model .....
AC 110/120 ~ 127/220/240V (switchable), 50/60 Hz
Power Consumption
U.S.,Canadian models 32W
European, U.K. model 32W
Multi voltage model/U.S. military model 31W
Dimensions ..... 420(W) x 135(H) x 318.5(D) mm
16-9/16(W) x 5-3/16(H) x 12-1/2(D) inches
Weight ..... approx. 5.7 kg (12 lb 9 oz)

Accessories

Operating instructions 1
Connection cords (RCA pin plugs) 2
CD·DECK SYNCHRO cord 1
Remote control cord (U.S. and Canadian models) 1
Remote control unit (CT-W840R only) 1
Dry cell batteries (size AAA/IEC R03) (CT-W840R only) 2

NOTE:
Specifications and design are subject to modification for improvement without any notice.

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